

NAVAL WAR COLLEGE  
Newport, RI

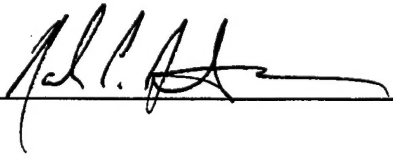
THE FUTURE OF CENTRALIZED CONTROL FOR AIRPOWER

By

Mark P. Foster  
Lieutenant Colonel, USAF

A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: 

17 May 1999

**DISTRIBUTION STATEMENT A**  
Approved for Public Release  
Distribution Unlimited

Advisor: 

PHILLIP S. MEILINGER, Col., USAF  
Strategy & Policy Department

DTIC QUALITY INSPECTED 4

19991122 131

## REPORT DOCUMENTATION PAGE

1. Report Security Classification: UNCLASSIFIED			
2. Security Classification Authority:			
3. Declassification/Downgrading Schedule:			
4. Distribution/Availability of Report: DISTRIBUTION STATEMENT A: APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.			
5. Name of Performing Organization: JOINT MILITARY OPERATIONS DEPARTMENT			
6. Office Symbol: C		7. Address: NAVAL WAR COLLEGE 686 CUSHING ROAD NEWPORT, RI 02841-1207	
8. Title (Include Security Classification): The Future of Centralized Control for Airpower. (U)			
9. Personal Authors: Mark P. Foster, LtCol, USAF			
10. Type of Report: FINAL		11. Date of Report: 17 May 1999	
12. Page Count: 24			
13. Supplementary Notation: A paper submitted to the Faculty of the NWC in partial satisfaction of the requirements of the JMO Department. The contents of this paper reflect my own personal views and are not necessarily endorsed by the NWC or the Department of the Navy.			
14. Ten key words that relate to your paper: airpower, command, control, execution, technology, information, operational art, leadership, centralized, decentralized			
<p>15. Abstract: Air Force Basic Doctrine Document 1 lists seven tenets, or "fundamental guiding truths," for airpower employment. The first of these is centralized control and decentralized execution. This tenet dictates that "air and space power must be controlled by an airman who maintains a broad strategic and/or theater perspective in prioritizing the use of limited air and space assets to attain the objectives of all US forces in any contingency across the range of operations."</p> <p>This paper addresses the following questions regarding the information revolution's impact on this tenet:</p> <p>How does this impact the principle of centralized command and decentralized execution? Is this paradigm outmoded? Do we want or need the command and decision authority pushed down to the tactical unit level? Alternatively, will exceptionally talented and capable systems invite higher authority micro-management of tactical actions? How might such possible "decision up-creep" be mitigated?</p> <p>The information revolution, combined with either the political imperatives associated with limited conflicts or the threat posed by an emergent "niche competitor," will tend to lead U.S. airpower further away from the concept of centralized control and decentralized execution. This should be a conscious decision, however. As "a statement of officially sanctioned beliefs and warfighting principles that describe and guide the proper use of...forces in military operations [emphasis added]," doctrine and operational art are closely linked. Therefore, operational art should be an explicit factor in the decision. The author recommends several elements of operational leadership that the operational commander should explicitly consider in making such a decision.</p>			
16. Distribution / Availability of Abstract:	Unclassified  X	Same As Rpt	DTIC Users
17. Abstract Security Classification: UNCLASSIFIED			
18. Name of Responsible Individual: CHAIRMAN, JOINT MILITARY OPERATIONS DEPARTMENT			
19. Telephone: 841-6461		20. Office Symbol: C	

# THE FUTURE OF CENTRALIZED CONTROL FOR AIRPOWER

## TABLE OF CONTENTS

	PAGE
INTRODUCTION _____	1
CONTROL AND EXECUTION: THE AIR PERSPECTIVE _____	2
HISTORICAL CASES _____	3
VIETNAM _____	3
DESERT STORM _____	4
DELIBERATE FORCE _____	5
ALLIED FORCE _____	6
IMPACT OF TECHNOLOGY _____	7
OTHER FACTORS _____	8
JOINTNESS _____	8
POLITICAL CONSIDERATIONS _____	9
FUTURE IMPLICATIONS _____	10
THE PEACEKEEPING CONTINUUM _____	10
NICHE COMPETITORS _____	11
OPERATIONAL ART _____	12
SUMMARY AND RECOMMENDATIONS _____	15
NOTES _____	APPENDIX A
BIBLIOGRAPHY _____	APPENDIX B

# THE FUTURE OF CENTRALIZED CONTROL FOR AIRPOWER

## INTRODUCTION

Air Force Basic Doctrine lists seven tenets, or "fundamental guiding truths," for airpower employment. The first--and arguably foremost--of these is centralized control and decentralized execution. This tenet dictates that "air and space power must be controlled by an airman who maintains a broad strategic and/or theater perspective in prioritizing the use of limited air and space assets to attain the objectives of all U.S. forces in any contingency across the range of operations."<sup>1</sup> Drawing on the lessons of history, airmen believe that centralized control will allow them to apply the air weapon's unique capabilities where and when it will make the biggest contribution to achieving the theater-strategic and/or operational commander's objectives. Joint doctrine incorporates the concept's essence in the simple phrase "[Joint Force Commanders] will normally designate a [Joint Force Air Component Commander]."<sup>2</sup>

While control should be centralized, the "delegation of execution authority to responsible and capable lower-level commanders"--decentralized execution--"is essential to achieve effective span of control and to foster initiative, situational responsiveness, and tactical flexibility."<sup>3</sup> This means that the controlling authority tells his subordinate units *what* to do but not *how* to do it.

The phrase "centralized control, decentralized execution" simply describes a particular aspect of the command and control (C<sup>2</sup>) process. It tells *where* in the organization (i.e., at what level in the chain of command) the *what* and *how* decisions get made. And C<sup>2</sup> is based on information. Yet information technology is now clouding this precept's future. If information is driving "a revolution in military affairs (RMA) unlike any seen since the Napoleonic Age,"<sup>4</sup> then the U.S. must take a fresh look at the doctrine guiding its information-based processes.

How does this impact the principle of centralized command and decentralized execution? Is this paradigm outmoded? Do we want or need the command and decision authority pushed down to the tactical unit level? Alternatively, will exceptionally talented and capable systems invite higher

authority micro-management of tactical actions? How might such possible "decision up-creep" be mitigated?<sup>5</sup>

This paper's purpose is to address these questions as they relate to the *control* of airpower. Since reasonable people could differ in their views on what constitutes "centralized" control, the author will first define the concept of centralization/decentralization in the context of the air command and control (C<sup>2</sup>) process. He'll then outline the increasing degree of centralization achieved in four cases from Vietnam to the present, followed by an explanation of both technological and non-technological factors that drove that centralization. Based on this evidence, the author will assess the future implications for centralized control in the context of two likely near-term uses of airpower--the "peacekeeping continuum" and response to a "niche competitor." Next, he will review pertinent operational art factors that should be taken into account in deciding how much centralization is appropriate. He will include appropriate examples showing how centralization impacted these factors in the most recent U.S. operations. Having done this, he will recommend some specific operational leadership-related issues the operational commander should consider in organizing a future air command and control process.

The author imposed several limitations on the paper to keep it manageable. First, it does not address all relevant historical cases, but focuses on four between Vietnam and the present. Second, it discusses general technological trends rather than providing a detailed investigation of specific technologies. Finally, since the principle of centralized control, decentralized execution applies somewhat differently to different air missions, the paper focuses on the "strike" mission.

### **CONTROL AND EXECUTION: THE AIR PERSPECTIVE**

Since "selecting objectives to strike or influence is the essence of air strategy,"<sup>6</sup> the key C<sup>2</sup> decisions revolve around targets. The decisions span the range from strategic to tactical. What targets should be attacked to best support the operational commander's objectives? Based

on the operational factors of space, time, and forces, what combinations of platforms and weapons should execute the attack? How should pilots employ these assets, individually and in formation, to get "bombs on target?" In theory, the strategic/operational decisions are made centrally; the tactical decisions related to mission execution are made at the unit level.

Centralized control, decentralized execution is not binary, however. One can't look at a given operation and conclude that it either exhibits this trait or it doesn't. Rather, one structure will be more or less centralized than another. Additionally, it's useful to consider centralization in two dimensions: *horizontal* (i.e., across component and/or unit lines) and *vertical* (at what level within the chain of command are decisions made). With this in mind, a review of selected cases should reveal how centralization correlates with improvements in C<sup>2</sup> capability over time.

### HISTORICAL CASES

#### *Vietnam* <sup>7</sup>

The control of U.S. "strike" airpower in Vietnam was *horizontally* decentralized in that it was extremely fragmented. COMUSMACV, as a subunified combatant commander, was the operational level commander. The MACV air component controlled Air Force and Navy tactical air and some Air Force tactical operations in Laos and North Vietnam. The unified command air component (PACAF) controlled most Air Force tactical operations in Laos and North Vietnam. The unified command naval component (PACFLT) controlled all Navy operations in the North. For most of this period the Marines controlled their assets operating in support of their ground forces in the South. Finally, CINCSAC controlled B-52s operating out of Guam and Thailand through a subordinate command. Decentralized control for missions up North was institutionalized and "simplified" via the "route package" system. In short, MACV was only one of a number of commanders controlling air employment at the operational level.

Paradoxically, control was very much *vertically* centralized. Early on, the secretary of defense met with "top regional military commanders...[to set] air priorities..." and "the president and the secretary of defense were carefully adjusting--and even micromanaging--the deployment and employment of American military power in Southeast Asia...."<sup>8</sup> In the case of B-52 operations, Washington was in the approval chain for *individual targets*.

### ***Desert Storm***<sup>9</sup>

Relative to Vietnam, control of air operations in Desert Storm was much more centralized *horizontally*. The theater air component commander (CENTAF), in his role as JFACC, controlled the vast majority of U.S. and coalition air operations. Mechanically, this was accomplished by the CENTAF campaign planning division in the Tactical Air Control Center (TACC) in the form of the Master Attack Plan (MAP) and Air Tasking Order (ATO).

Since Washington did not involve itself in the details of the air operation, control was less centralized *vertically* than in Vietnam, but only to a point. At the operational level, the JFACC exercised significant control over lower-level actions. The MAP was both "a means to facilitate the planning process and...a tool to centralize authority in the hands of the planners."<sup>10</sup> Its purpose was to lay out a plan for achieving strategic and operational effects using airpower, but it included significant tactical detail. Based on CINC and JFACC guidance, the MAP for any given day identified the targets to be attacked (including aimpoints), the desired timing, the number and types of aircraft required, and weapon type. It also identified the support aircraft to be packaged with the strike (e.g., combat air patrol, defense suppression) and air refueling instructions. "The ATO was...an administrative vehicle to...transfer the daily plan to the wings and...provide...detailed information required for the execution of the plan."<sup>11</sup> Control of the

MAP and ATO lay overwhelmingly with the campaign planning division chief and a core group of planners from the "Black Hole."

### *Deliberate Force*<sup>12</sup>

As in Desert Storm, Deliberate Force air operations were *horizontally* centralized among the various U.S. and NATO components. The Commander, Allied Air Forces Southern Command (COMAIRSOUTH) was the JFACC. Under his purview, the 5<sup>th</sup> Allied Tactical Air Force (5 ATAF) Combined Air Operations Center (CAOC) controlled all strike-related planning. And like Desert Storm, the CAOC's means of control was the detailed daily ATO. Beyond this, however, the similarities between Desert Storm and Deliberate force quickly disappear.

*Vertically*, control of Deliberate Force air operations was more centralized than in Desert Storm. The command chain above 5 ATAF and AIRSOUTH went in turn to Allied Forces Southern Europe (AFSOUTH) and the Supreme Allied Commander Europe (SACEUR), whose political direction came from the North Atlantic Council (NAC) at the "alliance strategic" level. The NAC had to approve the Deliberate Force concept of operations before AFSOUTH could implement it. Furthermore, offensive air strikes required "dual key" approval by the U.N. Protection Force (UNPROFOR) commander and CINCAFSOUTH.<sup>13</sup> Finally, once these decisions were made, the UNPROFOR commander had to approve the initial targets. Day to day planning was also centralized at AIRSOUTH. While reporting to 5 ATAF on paper, the CAOC actually answered directly to COMAIRSOUTH.<sup>14</sup> COMAIRSOUTH managed the operation closely "to ensure that the weapons and tactics utilized by NATO would be selected and flown to accomplish the required levels of destruction at minimum risk of unplanned or collateral damage...."<sup>15</sup> In contrast to Desert Storm (where the JFACC delegated much of the planning responsibility to the CENTAF campaign planning division), he "personally oversaw the selection



of every [aimpoint] in every target. He also personally scrutinized every selection...decision made for the actual weapons to be used against [aimpoints], and...he examined or directed many tactical decisions about such things as the strike launch times, the specific composition of attack formations, and the selection of bomb-run routes."<sup>16</sup> He also made "all definitive BDA determinations himself."<sup>17</sup>

### *Allied Force*

Operation Allied Force is ongoing as this paper is being written. The C<sup>2</sup> arrangements remain classified. From NATO press conferences and other open source information it appears control is even more *vertically* centralized than was the case in Deliberate Force. The same NATO command structure applies, with the mechanics of the planning process handled in the CAOC. In this case, however, the NAC and SACEUR seem more heavily involved in the decision-making. According to one account, "this campaign is all about controlled force--controlled by politicians in everything from target selection to level of intensity...."<sup>18</sup> In the NATO consensus decision-making process, all 19 members on the NAC had to approve initiation of, and targets within, each of the effort's three-phases.<sup>19</sup> The NAC recently allowed SACEUR some flexibility for phase three by giving the Secretary General target approval authority.<sup>20</sup> Another source indicates that COMAIRSOUTH "is in reality an administrator of the air war, neither in charge of the target selection nor in control of the overall strategy. Those functions are retained by the [NAC]...and [SACEUR]."<sup>21</sup> "Air planners...are being issued targets each day for the next day's operations," with SACEUR exercising "personal control of the air campaign."<sup>22</sup>

## IMPACT OF TECHNOLOGY

The trend from Vietnam to Allied Force is generally one of increasing centralization--both *horizontal* and *vertical*. Improvements in information technology facilitated this trend.

Clearly, information technology facilitated *vertically* centralized control of airpower in Vietnam, as evidenced by the involvement of Hawaii, Washington and Omaha in the day-to-day management of B-52s based in Guam and Thailand.

In Desert Storm, national and theater leaders didn't follow this lead. Technology did, however, allow an unprecedented "massing" of control at the *operational* level. For example, secure telephones "allowed planners to request and receive information and intelligence from sources worldwide without having to rely on...the military message traffic system."<sup>23</sup> The Computer Assisted Force Management System (CAFMS) enabled the TACC to generate detailed ATOs directing an average of 2,780 sorties per day (with a peak of 3,300) and to transmit them electronically to Air Force units.<sup>24</sup> And Desert Storm planners at least perceived they had the technological wherewithal to manage operations in near real time, using fresh information (not yet validated by staff) to direct last-minute ATO changes.<sup>25</sup>

Technology was one factor in the ability to centralize control *horizontally* and *vertically* in Deliberate Force air operations. AIRSOUTH outfitted the CAOC with "a flood of state-of-the-art communications, intelligence, and automated planning systems," including the Contingency Theater Air Planning System (follow-on to the CAFMS system used in Desert Storm), which "would vastly enhance [their] ability to plan, monitor, and control high-intensity air operations in near real time."<sup>26</sup> One result was that "communications between the [CAOC] and the carrier...were significantly better in [Bosnia] than...in the Gulf War," contributing to better "integration of Navy and Marine Corps aircraft into combined air operations."<sup>27</sup>

There isn't much specific information available at this point regarding technology's contribution to the greater *vertical* centralization of control in Allied Force. One can only observe that SACEUR is allegedly performing some of the same control functions from his headquarters in Belgium that COMAIRSOUTH handled from his on-scene headquarters in Italy during Deliberate Force.

### **OTHER FACTORS**

Information technology advances have allowed leaders to *vertically* centralize greater amounts of control over air operations at the operational and even strategic levels. Operational leaders are making more tactical decisions, and strategic leaders are making more operational (and in some cases, tactical) decisions. But to conclude, based on this trend, that the information revolution will lead to further grabbing of control at these levels would be a case of "post hoc, ergo propter hoc."<sup>28</sup> Leaders have not made arbitrary and capricious decisions to micromanage "just because they could." Rather, other factors both contributed to their ability to do so or (in their minds) drove them to do so.

#### ***Jointness***

One such factor has been "jointness," which largely determines the degree of *horizontal* centralization attainable. Doctrine, training, experience, joint operational staffs, and inter-service politics have been either limited or facilitated *horizontally* centralized control. In Vietnam, "the services brought their own, mostly unchanged, tactical air doctrines...no joint doctrine had been developed."<sup>29</sup> Service doctrinal and political disputes over "mission priorities, command arrangements, and resource allocations"<sup>30</sup> resulted in splintered air operations control. Goldwater-Nichols, joint exercises, and acceptance of the JFACC concept in joint doctrine are

among the reasons *horizontally* centralized control was achieved (and effective) in Desert Storm, Deliberate Force, and Allied Force.<sup>31</sup>

### ***Political Considerations***

The extent to which leadership sees the need to subordinate purely military considerations to policy imperatives has been the other major determinant of centralization. But in contrast with jointness, evidence shows that political factors determine the degree of *vertical* centralization. In World War II, our last "total war," the Allies established unconditional surrender as the strategic objective early on. Military leaders were given great discretion to plan and execute campaigns to achieve that objective (subject to periodic review at the policy level). The more recent examples in this paper have been "limited" wars/conflicts, in which force was constrained to one degree or another. To the civilian leadership in Vietnam, their responsibility to prevent the conflict from escalating into superpower confrontation clearly outweighed purely military considerations and justified *vertically* centralizing control at the national-strategic level. Desert Storm was somewhat different. With relatively straightforward military objectives, and absent an "escalation threat," political leaders didn't feel compelled to *vertically* centralize control at their level. At the same time, perceived political considerations caused the JFACC's campaign planner to make real time, last minute ATO. Fearing that the political level might terminate the war at any moment, he wanted "to hit every strategic target in Iraq as quickly as possible."<sup>32</sup> He therefore felt compelled to direct a change if, for example, he learned from bomb damage assessment that a "restrike" planned for the next day was no longer necessary. COMAIRSOUTH further centralized Deliberate Force operations--around himself--"because he believed it would give him tighter control over what he anticipated was going to be a fast-paced and *politically hypersensitive* [emphasis added] situation."<sup>33</sup> He and CINCAFSOUTH worried

that high collateral damage or casualties to NATO forces, civilians, or Bosnian Serb combatants would threaten public support and U.N./NATO political cohesion and as a result "bring [the operation] to a halt before it had its intended effects."<sup>34</sup> These same considerations appear to be at work in Allied Force. Only this time, control of air operations is *vertically* centralized even higher in the chain of command--between the SACEUR and the NAC. Political concerns over the future of the alliance itself seem to be contributing to this pressure at the alliance- and theater-strategic levels. "'The stakes for NATO are NATO,' said one senior U.S. policymaker. 'It's the relevance and vitality of the organization.'"<sup>35</sup>

### **FUTURE IMPLICATIONS**

Technology has been a necessary but not sufficient condition for ever more *vertically* centralized control of airpower, providing the means for higher level commanders to become more involved. The growing political constraints associated with limited wars have provided the motive for them to do so. What does this portend for the future?

#### ***The Peacekeeping Continuum***

In the short term, America will likely focus its use of airpower on what Air Vice Marshal Tony Mason calls the peacekeeping continuum, in which he includes such missions as "humanitarian assistance, protection, self-defense, peace-enforcing as well as peacekeeping."<sup>36</sup>

A...characteristic of air operations in the modern peacekeeping continuum is that they will have a supranational authority, usually the United Nations. The implication of such authorization is that air power must be applied with scrupulous regard to formal international agreements and in accordance with the principles upheld by the authorizing organizations. ... As a result, peacekeeping is likely to be subject to more resource constraints, political control and narrow political sensitivities than traditional military activities. Failure on the part of airmen to recognize and accept such political realities and their operational implications would have serious consequences for the future procurement for an application of air power.<sup>37</sup>

The call for an emergency U.N. Security Council session immediately following the recent accidental bombing of the Chinese embassy in Belgrade exemplifies the external pressures operational commanders will be operating under. Based on recent history, these pressures will

no doubt increase the temptation for both civilian and military senior leaders to *vertically* centralize control of the air weapon.

### *Niche Competitors*

According to Jeffrey R. Barnett, another threat the U.S. could face relatively soon (*within* the next 10-20 years) is a "niche competitor."<sup>38</sup> A niche will employ "limited numbers of emerging weapons with a robust inventory of current weapons...[and] an innovative CONOPS" in an attempt "to effectively challenge U.S. interests in its region by making the U.S. military response sufficiently costly to either deter initial involvement or dissuade further involvement."<sup>39</sup> The emerging weapons will include stealthy cruise missiles and other precision weapons. Conflict will be a short notice, "come as you are" affair, in which "the niche is doing something *outside its borders* [emphasis in original] that is contrary to substantial U.S. interests."

A U.S. response will consist of strategic attacks against enemy information nodes and sources of wealth, in parallel with "halt phase" attacks against massed invasion formations. "High-signature, immobile forces [like air bases or an in-theater air operations center] would be extraordinarily vulnerable to a niche competitor's cruise missiles."<sup>40</sup> As a result, Barnett asserts the U.S. will require a CONUS-based JFACC exercising highly centralized C<sup>2</sup> of long-range platforms operating from outside the enemy's defenses. In addition to survivability advantages, he argues that a permanent CONUS facility will allow efficient access to information sources and expertise in the U.S., and immediate ability to task worldwide (i.e., out of area) forces. Finally, transit times for long-distance platforms will necessitate real time updates and/or retasking to accommodate fluid situations. In Barnett's scenario, military necessity replaces political sensitivity as the motive for future *vertical* centralization.

It's easy to conclude that the information revolution will lead U.S. airpower further towards *vertically* centralized control--towards removing the word "decentralized" from "centralized control and decentralized execution." This should be a conscious decision, however. As "a statement of officially sanctioned beliefs and warfighting principles that describe and guide the *proper use of...forces in military operations* [emphasis added],"<sup>41</sup> doctrine and operational art are linked. Therefore, operational art should be an explicit factor in the decision.

### ***Operational Art***

Operational leadership is an important component of operational art as regards the centralization issue. It posits distinct roles and responsibilities for each level in the command chain--national-strategic, theater-strategic, operational, and tactical. *Vertically* over-centralizing the C<sup>2</sup> process potentially blurs these roles. For example, one dictum of operational leadership that conflicts with *vertical* centralization is "the operational commander should not to into minute tactical details and interfere with the responsibilities of a subordinate tactical commander. Too much involvement in tactical details is bound to negatively affect the commander's operational vision...."<sup>42</sup> There is some evidence this happened in Desert Storm, with the campaign planning division chief's last minute ATO changes. If the air campaign's intent was "to keep the Iraqi military confused and disorganized by a relentless and constant attack...why was it necessary to have so many last-minute target and timing changes? Unless the new target was mobile, it could easily have been added to the third day of the planning cycle."<sup>43</sup>

The same logic applies at the strategic level--too much involvement in operational or tactical details can limit strategic vision. In Vietnam, Washington worried about individual bombing targets but neglected the fact that the bombing didn't support a coherent strategy. In Desert Storm, the destruction of tactical targets on the "highway of death" contributed to pressure

at the national level to terminate the war, allowing about 50% of the Republican Guard forces--the operational center of gravity--to escape.<sup>44</sup> In Allied Force, NAC scrutiny of individual targets led to a phased effort that may have robbed the air weapon of its full shock value, and reminds one of the gradual escalation "strategy" in Vietnam. Moreover, time will tell whether the focus on individual tactical events, driven by concerns for collateral damage, will lead to irresistible pressure to stop the operation before achieving the original political objectives.

It can also be said that too much involvement in strategic (i.e., policy) details will affect the commander's operational vision. The campaign planner and JFACC in Desert Storm and Deliberate Force (respectively) feared politicians would pull the plug on the war before they got the job done. They allowed this somewhat distorted relationship between political and military objectives to drive their "micromanagement." Although Allied Force is still underway, it has been reported that "NATO's commanders have 'no clear feeling of political support.'"<sup>45</sup>

Operational leadership also calls for commanders to be flexible enough to act "independently in situations where contact with superiors is impractical or impossible."<sup>46</sup> Rather, "operational commanders should be responsible for developing the leadership characteristics and the military skills of their subordinate commanders. They should teach them self-reliance, how to act on their own, and how to make quick, sound military decisions."<sup>47</sup> This could be problematic in a *vertically* centralized structure, as "flexibility...is not available to the commander whose 'subordinates and their staffs...are trained only to act on detailed orders and to obey complex...standard operating procedures....'"<sup>48</sup> Fortunately, the highly centralized control systems in Desert Storm and Deliberate Force (and thus far Allied Force) were not put to this test because the opposition lacked the capability to do so.



In making organizational decisions, the operational artist must assess "the degree of centralization required for *effective* [emphasis added] command and control of assigned forces."<sup>49</sup> A commander (or a staff) can only take on so much responsibility and maintain effectiveness. For the core group of Desert Storm planners, the magnitude of the task, and the associated stress, were so great that "nerves grew increasingly taut and tempers frayed. For some individuals, the stress was almost unbearable."<sup>50</sup> Likewise, the Deliberate Force JFACC and "a few members of his staff...worked 18-hour days throughout the campaign. After two weeks, they were...very tired." The Balkans Air Campaign Study team believed this could have become a problem in a longer campaign. They also assert that the workload left the JFACC "with minimal time and energy to consider the other responsibilities that fall to a senior component commander."<sup>51</sup> Combat fatigue isn't uniquely a C<sup>2</sup> issue. It is an important consideration, however; the more *vertically* centralized a C<sup>2</sup> system, the greater the chance it could negatively impact an overburdened commander's operationally or strategically important decisions.

The need for trust follows from the need for flexibility. "As a superior, trust of subordinates is required, allowing them as much freedom of action as possible and encouraging them to exercise initiative at their level."<sup>52</sup> The trust a commander places in his subordinates will determine whether they have "energy in carrying out their decisions...[and] pride and satisfaction in their work"<sup>53</sup> or "a felt lack of control and...awareness that one is perceived as expendable."<sup>54</sup> Unfortunately, recent experience tends towards the latter. In the *vertically* centralized C<sup>2</sup> processes of Desert Shield and Deliberate Force, there were "us versus them" problems between planners inside and outside the core groups.<sup>55</sup> Moreover, in Deliberate Force some flyers felt "confusion and frustration...over such things as the rules of engagement [and] outside 'interference' with their detailed tactical plans and decisions," which they believed "put

[them] at greater and unnecessary risk."<sup>56</sup> Finally, the *Washington Post* recently reported complaints aimed at SACEUR, the President and the NAC about how they're running Allied Force.<sup>57</sup>

### SUMMARY AND RECOMMENDATIONS

Advances in the ability to move information over longer distances in less time, and to manipulate that information, facilitated (if not enabled) *horizontal* and *vertical* centralization of control. RMA enthusiasts predict capabilities that will certainly enable even tighter control at higher levels in the future. "Strike" execution remains decentralized in that units still plan the details of individual missions and carry them out based on doctrine, tactics, and experience. But the performance of "tactical" functions like force packaging, aimpoint selection, and weaponeering at the operational level—as exhibited in Desert Storm and Deliberate Force—blurs that line between centralized control and decentralized execution.

Technology is not the motivating force. Currently, jointness and political considerations drive a leader's desire or perceived need to centralize control. In the future, the threat posed by a niche competitor may be the motivator.

Increasing *vertical* centralization isn't necessarily a "problem"—it's neither "good" nor "bad," except in the context of a specific situation. Desert Storm and Deliberate Force both succeeded. At the same time, the degree of *vertical* centralization in each created stress points that could have become real problems had the enemy been able to protract the conflict or attack U.S. C<sup>2</sup> nodes. This could be an important consideration against a future more capable "niche competitor." As Coakley points out, "most of what we think of as C<sup>2</sup> 'issues' can be stated in terms of balances."<sup>58</sup> Looking at it this way, centralized control, decentralized execution is really about "finding the appropriate mean between centralized and decentralized C<sup>2</sup>."<sup>59</sup> This requires a

conscious decision. In making this decision, one should bear in mind that technology may improve the tools human beings use to wage war, but the humans themselves remain pretty much the same. The operational art element most concerned with human traits and character is operational leadership. Certain operational leadership precepts militate against *vertical* centralization. This author recommends the operational commander (and perhaps his civilian and military masters) consider the following in deciding how much control to keep or delegate.

Maintain operational vision. Do not take on lower-level tasks that detract from his ability to see the "big picture." Consider whether a given decision, such as destruction of an individual target, will impact the conflict at the operational level. Operational vision will be stressed even more in the "niche" scenario. Directing "halt phase" attacks on individual targets will be less important than things like synchronizing the initial response of long- and short-range platforms, incorporating coalition forces, developing a plan for strategic/operational attacks, and operational protection (especially of information) to name a few. Information technology, combined with doctrine and training, will allow individual formations to make targeting decisions "on the way in."

Seek better connectivity to policy makers. The operational commander shouldn't have to worry about loss of political "support." Using the CJCS as the communications conduit between the NCA and the CINC has not worked well in recent this regard. He needs a policy counterpart readily available so that policy and force "can anticipate and educate themselves and one another on the appropriate boundaries and rules of their relationship under given circumstances."<sup>60</sup>

Remember, "flexibility is the key to airpower." *Vertical* centralization creates a potential critical vulnerability. A JFACC in CONUS may be safe from enemy stealthy cruise missiles, but perhaps not from an information attack or sabotage. If the situation dictates tight central control,

provide subordinates not only with their "instructions" but also with enough information on the commander's intent so they can still execute if communications are interrupted or if the commander's database doesn't match "reality" in the target area. Conduct training so forces are "able to function independently of high-tech C<sup>2</sup> equipment when necessary."<sup>61</sup>

Trust is important. American airmen haven't reacted well to overly centralized control. This is especially important today, when our senior civilian and military leaders' integrity and trustworthiness is such a "hot button" issue.

A contributor to the "Balkans Air Campaign Study" compares the Deliberate Force JFACC's exercise of control in that operation with the "great captaincy" of Napoleon and other commanders before him. These great captains exercised vertically centralized control because the size of their forces was such that (1) tactical actions could have operational effects, and (2) available communications were sufficient for control the entire force. Great captaincy "became impractical in wars between large industrial states. In response, the Prussians led the world in developing a military system based on centralized strategic command, generalized planning by trained staff officers, and decentralized execution of operations...." It could be that the political imperatives of today's limited operations, combined with the information revolution, provide the conditions under which great captaincy is once again possible. But there's another lesson in this analogy. For Napoleon, although an operational genius, ignored some of the operational leadership factors discussed above. As a result, his subordinate commanders could not replicate his brilliance. His opponents found that, while they couldn't beat Napoleon himself, they could beat these subordinates. This was but one factor leading to his ultimate demise. It's a lesson worth bearing in mind as U.S. airmen and their military and civilian masters decide where they should allow technology to take them in the future.<sup>62</sup>

## APPENDIX A

### NOTES

<sup>1</sup> Department of the Air Force, *Air Force Basic Doctrine* (AFDD-1) (Washington: September 1997), 23.

<sup>2</sup> Joint Chiefs of Staff, *Doctrine for Joint Operations* (Joint Pub 3-0) (Washington: 1 February 1995), II-15.

<sup>3</sup> Department of the Air Force, 23.

<sup>4</sup> Arthur K. Cebrowski and John J. Garstka, "Network-Centric Warfare--Its Origin and Future," U.S. Naval Institute *Proceedings*, January 1998, 29.

<sup>5</sup> Naval War College, *Operations Paper: Guidance for Students* (NWC 2062C) (Newport, RI: February 1999), 3.

<sup>6</sup> Phillip S. Meilinger, "Ten Propositions Concerning Airpower," *Airpower Journal*, Spring 1996, 58.

<sup>7</sup> Unless otherwise noted, the reference source is James A. Winnefeld and Dana J. Johnson, *Joint Air Operations: Pursuit of Unity in Command and Control, 1942-1991* (Annapolis, MD: Naval Institute Press, 1993), 63-82.

<sup>8</sup> *Ibid.*, 64.

<sup>9</sup> Unless otherwise noted, the reference source is Mark D. Mandeles, et al., *Managing "Command and Control" in the Persian Gulf War* (Westport, CT: Praeger Publishers, 1996).

<sup>10</sup> Mandeles et al., 28.

<sup>11</sup> *Ibid.*

<sup>12</sup> Unless otherwise noted, the reference source is Robert C. Owen, "The Balkans Air Campaign Study: Part 1," *Airpower Journal*, Summer 1997, 4-24; and Robert C. Owen, "The Balkans Air Campaign Study: Part 2," *Airpower Journal*, Fall 1997, 6-26. Although the Operation Deliberate Force C<sup>2</sup> structure resulted from "an incremental, evolutionary process," and the operation was "technically...a phase of [Operation] Deny Flight," (Part 1, p. 9) this paper is limited to Deliberate Force only.

<sup>13</sup> The UNPROFOR commander and the CAOC director (or higher) could approve close air support of UNPROFOR forces. This was actually a decentralization of control process; prior to Deliberate Force the U.N. Secretary General and his special representative held the U.N. "keys" for offensive air strikes and CAS, respectively. See Owen, Part 1, pp. 15 and 21.

<sup>14</sup> This decision was made prior to Deny Flight by LtGen Ashy as COMAIRSOUTH, but was retained by his replacement, LtGen Ryan, for Deliberate Force.

<sup>15</sup> Owen, Part 2, 8.

<sup>16</sup> *Ibid.*, 9.

<sup>17</sup> *Ibid.*, 13.

## APPENDIX A

### NOTES (cont.)

<sup>18</sup> Mark Thompson, "How We Fight," *Time*, 26 April 1999, 29.

<sup>19</sup> North Atlantic Treaty Organization, "Press Conference by NATO Secretary General, Javier Solana and General Wesley K. Clark, SACEUR," 1 April 1999, <<http://www.nato.int/docu/speech/1999/s990401c.htm>> (28 April 1999); and U.S. Department of Defense, "DoD News Briefing, Presenter: Mr. Kenneth H. Bacon, ASD PA," 26 March 1999, <[http://www.defenselink.mil/news/Mar1999/t03271999\\_t0326asd.html](http://www.defenselink.mil/news/Mar1999/t03271999_t0326asd.html)> (28 April 1999).

<sup>20</sup> Dana Priest, "More U.S. Troops Head to Albania as NATO Adds Targets," *The Washington Post*, 24 April 1999, A17.

<sup>21</sup> William M. Arkin, "Objective: Kosovo," *The Washington Post*, 25 April 1999, B01.

<sup>22</sup> Ibid.

<sup>23</sup> Winnefeld and Johnson, 22.

<sup>24</sup> Ibid., 3, 130.

<sup>25</sup> Ibid., 46-47, 49.

<sup>26</sup> Owen, Part 1, 21.

<sup>27</sup> Dean Simmons et al., "Air Operations Over Bosnia," U.S. Naval Institute *Proceedings*, May 1997, 58-59.

<sup>28</sup> After this, therefore because of it.

<sup>29</sup> Winnefeld and Johnson, 63.

<sup>30</sup> Ibid., 65.

<sup>31</sup> This only asserts that centralized control is effective in Allied Force, not that the operation itself is effective as a result. It's premature to make any conclusions in this regard.

<sup>32</sup> Mandeles et al., 55.

<sup>33</sup> Owen, Part 1, 14.

<sup>34</sup> Owen, Part 2, 8.

<sup>35</sup> Barton Gellman, "Can Alliance Muster Will to Win?" *The Washington Post*, 25 April 1999, A01.

<sup>36</sup> Tony Mason, *Air Power: A Centennial Appraisal* (London: Brassey's Ltd., 1994), 182.

<sup>37</sup> Ibid., 184-5.

<sup>38</sup> The reference for the discussion of future niche competitors in the following two paragraphs is Jeffrey R. Barnett, *Future War: An Assessment of Aerospace Campaigns in 2010* (Maxwell AFB, AL: Air University Press, 1996), xvii-xxvi and 71-105.

<sup>39</sup> Barnett, 71-2.

<sup>40</sup> Ibid., 97.

## APPENDIX A

### NOTES (cont.)

- <sup>41</sup> Department of the Air Force, 1.
- <sup>42</sup> Milan Vego, "On Operational Art," (Unpublished Third Draft, U.S. Naval War College, Newport, RI: 1998), 323.
- <sup>43</sup> Mandeles et al., 57.
- <sup>44</sup> Michael Sterner, "Closing the Gate: The Persian Gulf War Revisited," *Current History*, January 1997, 15-16.
- <sup>45</sup> Gellman.
- <sup>46</sup> Vego, 322.
- <sup>47</sup> Vego, 323.
- <sup>48</sup> Richard E. Simpkin, quoted in Coakley, 108.
- <sup>49</sup> Vego, 340.
- <sup>50</sup> Mandeles et al., 150.
- <sup>51</sup> This and the preceding quote are from Owen, Part 2, 10 and 22 (respectively).
- <sup>52</sup> Vego, 322.
- <sup>53</sup> Vego, 323.
- <sup>54</sup> Thomas P. Coakley, *Command and Control for War and Peace* (Washington: National Defense University Press, 1992), 102.
- <sup>55</sup> For Desert Storm, see Mandeles, et al., 57-8; for Deliberate Force, see Owen, 22-3.
- <sup>56</sup> Owen, Part 2, 11.
- <sup>57</sup> Arkin.
- <sup>58</sup> Coakley, 150.
- <sup>59</sup> Coakley, 171.
- <sup>60</sup> Owen, Part 2, 22.
- <sup>61</sup> Coakley, 91.
- <sup>62</sup> Preceding discussion drawn from Owen, Part 2, 9.

## APPENDIX B

### BIBLIOGRAPHY

- Arkin, William M. "Objective: Kosovo." *The Washington Post*, 25 April 1999, B01.
- Barnett, Jeffrey R. *Future War: An Assessment of Aerospace Campaigns in 2010*. Maxwell Air Force Base, AL: Air University Press, 1996.
- Cebrowski, Arthur K. and John J. Garstka. "Network-Centric Warfare--Its Origin and Future." *U.S. Naval Institute Proceedings*, January 1998, 28-35.
- Coakley, Thomas P. *Command and Control for War and Peace*. Washington: National Defense University Press, 1992.
- Gellman, Barton. "Can Alliance Muster Will to Win?" *The Washington Post*, 25 April 1999, A01.
- Mandales, Mark D., Thomas C. Hone, and Sanford S. Terry. *Managing "Command and Control" in the Persian Gulf War*. Westport, CT: Praeger Publishers, 1996.
- Mason, Tony. *Air Power: A Centennial Appraisal*. London: Brassey's Ltd., 1994.
- Meilinger, Phillip S. "Ten Propositions Concerning Airpower." *Airpower Journal*, Spring 1996, 50, 52-72.
- North Atlantic Treaty Organization. "Press Conference by NATO Secretary General, Javier Solana and General Wesley K. Clark, SACEUR." 1 April 1999.  
<<http://www.nato.int/docu/speech/1999/s990401c.htm>> (28 April 1999).
- Owen, Robert C. "The Balkans Air Campaign Study: Part 1." *Airpower Journal*, Summer 1997, 4-24.
- \_\_\_\_\_. "The Balkans Air Campaign Study: Part 2." *Airpower Journal*, Fall 1997, 6-26.
- Priest, Dana. "More U.S. Troops Head to Albania as NATO Adds Targets." *The Washington Post*, 24 April 1999, A17.
- Simmons, Dean, Phillip Gould, Verena Vomastich, and Philip Walsh. "Air Operations over Bosnia." *U.S. Naval Institute Proceedings*, May 1997, 58-63.
- Stern, Michael. "Closing the Gate: The Persian Gulf War Revisited." *Current History*, January 1997, 13-19.
- Thompson, Mark. "How We Fight." *Time*, 26 April 1999, 29-33.
- U.S. Department of the Air Force. *Air Force Basic Doctrine (AFDD-1)*. Washington: September 1997.



## APPENDIX B

### BIBLIOGRAPHY (cont.)

- U.S. Department of Defense. "DoD News Briefing, Presenter: Mr. Kenneth H. Bacon, ASD PA." 26 March 1999.  
<[http://www.defenselink.mil/news/Mar1999/t03271999\\_t0326asd.html](http://www.defenselink.mil/news/Mar1999/t03271999_t0326asd.html)> (28 April 1999).
- U.S. Joint Chiefs of Staff. *Doctrine for Joint Operations* (Joint Pub 3-0). Washington: 1 February 1995.
- U.S. Naval War College. *Operations Paper: Guidance for Students* (NWC 2062C). Newport, RI: February 1999.
- Vego, Milan. "On Operational Art." Unpublished Third Draft, U.S. Naval War College, Newport, RI: 1998.
- Winnefeld, James A. and Dana J. Johnson. *Joint Air Operations: Pursuit of Unity in Command and Control, 1942-1991*. Annapolis, MD: Naval Institute Press, 1993.